ROCKS and MINERALS

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ROCKS and MINERALS PEEKSKILL, N. Y., U. S. A.

The Official Journal of the Rocks and Minerals Association

CHIPS FROM THE QUARRY

(Formerly the Bulletin Board)

Merry Christmas and a Happy New Year to All Our Readers

MAY THE NEW YEAR HAVE IN STORE FOR EACH AND EVERY ONE OF YOU LOTS OF HEALTH, WEALTH AND HAPPINESS IS OUR SINCERE WISH.

National Geological Club

An organization unique in character and yet serving a useful purpose is the National Geological Club which was organized in 1930 by Mrs. Daisy Patricia Stockwell of Kimmswick, Mo. Mrs. Stockwell, an amateur geologist and mineralogist, conceived the idea that if she were to gather together notes, articles, maps, photos, and specimens of localities and occurrences in Missouri, people with similar tastes in other sections of the country would be glad to see and examine them and in turn would prepare similar packets on their localities. The idea met with a warm response. Later a Club was formed which now has members in most every state of the Union. Mrs. Stockwell was elected President.

The Club is divided into groups. Packets are prepared for distribution and with each is a list of members and their addresses in that group. A packet circulates from member to member, each member being requested to contribute something—letter, notes, photos, etc.—and when it reaches the last name on the list, he or she returns the packet to the President.

At present there are no dues and membership is open to all persons interested in mineralogy or geology and who will agree to observe the few simple rules. For further details write to:— Mrs. Daisy Patricia Stockwell, Pres. National Geological Club, Mt. Olympus, Kimmswick, Mo.

It Pays To Advertise in ROCKS and MINERALS

Dear Editor:—

Am using 318 papers and magazines in America and foreign countries. ROCKS and MINERALS produces more buyers per dollar spent for advertising than any other publication. If you had a million circulation, I'd be a millionaire.— Bill Mc Campbell, Calexico, Calif.

Free Mineralogy Courses in Wyoming

The State Department of Vocational Education of Wyoming is conducting free courses in mining and mineralogy throughout the state. The courses cover three weeks, are open to men and women, and are under the supervision of C. S. Dietz, former Assistant State Geologist and U. S. Mineral Examiner for Wyoming. Mr. Dietz is a member of the Rocks and Minerals Association.

DO THEY PLEASE YOU?

In this issue we are featuring a series of articles on mineral trips. The series is by no means complete as more articles have been contributed than could be printed in one issue; the remaining articles will appear in a future number.

The editor would appreciate receiving cards from all readers commenting on the series printed.

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The Official Journal of the ROCKS and MINERALS ASSOCIATION

WHOLE No. 65

CASUAL MINERAL COLLECTING IN EUROPE

By JAMES A. TAYLOR

Mr. Taylor is Treasurer of the New York Mineralogical Club.

During the past summer I made a four thousand mile trip through Europe by automobile. While my definite hope was to collect minerals it is perhaps scarcely correct to call this a mineral trip because the presence of my wife and two boys necessitated a compromise of purpose. Before going on the trip I had the advise of Dr. Frederick Pough, of the American Museum of Natural History, who had taken a bicycle trip over much the same territory the year before. An account of his trip appears in "Natural History", No. 3, 1936. If I had been free to follow his kindly suggestions, I might have been able to procure some interesting specimens but as it was my collection was notable principally to illustrate that one could go so far tnd get so little.

We first went to Hamburg to the Baltic where I had hoped to procure some amber but the amber is found only on the shores of East Prussia. We then went all through friendly Denmark and thence for a week at Berlin for the Olympic Games. In Denmark one can pick up lots of flint, such as is found in the Dover, England, Chalk Cliffs, but mightly little else. All of this territory and for over a hundred miles south of Berlin is sand and gravel. It has either been the floor of an ocean or is a glacial area. I did not see a native rock in the whole territory. The first mineral region that I came to was Freiberg where the old lead, silver and zinc mines have not been worked for some years. Incidentally the visitor will find that almost all of the famous localities in Europe mentioned on museum specimens have also ceased to be worked and the dumps have been picked over to a discouraging degree. At Freiberg they still partly operate one of the mines as a sort of laboratory for the mining students. I was unable to visit the really interesting region about Wolsenberg near the Czechoslovakian border where there are some very unusual radioactive minerals.

The next stop was Carlsbad and Marienbad which produced nothing worth carrying home. A trip of two hundred miles due east through the flat uninteresting plains of Czechoslovakia also produced nothing but in Prague I did visit the museum, and saw a very fine collection of minerals, well mounted and well selected. At Salzburg it was extremely interesting to go though the salt mines which are very old and very deep. Incidentally the mines are not at Salzburg but ten miles to the east at Berchtes Garden, the summer home of Herr Hitler. These mines of vast extent have two entrances, one in Germany and the other in Austria, and are worked by the flooding of large excavations underground and the draining and evaporating of the salt solution. Access from one level to an-

other is gained by a red hot descent in a concave slide seated on a thin piece of leather. As is usual with most mines, the specimens are of the massive type and not much varied in character. I came out with a number under my belt since it is strictly forbidden to take anything from the mine.

Near here an amusing incident occurred in a very ancient inn where we arrived about nine at night in pouring rain pretty wet and tired. While waiting for our order to be prepared, I picked up one of their delicious rolls covered with globules of salt and caraway seeds and in a tired and idle moment took out my glass to see if the salt had crystallized in cubes. My family and about a dozen visitors to the restaurant speculated on what I was doing and finally decided that I was making a mistake in the identity of the caraway seeds. I got the laugh, loud and prolonged.

From then on our trip was through the Dolomites, hundred of miles of them, and Dolomites are rotten collecting areas. I must have gone into seventy-five quarries, large and small, (material used mostly for road building, I suppose) but only one of them yielded any specimens. In this one the specimens were in the face of solid rock and as I did not have my big sledge with me, I was unable to bring them along. There are some good areas in the Dolomites notably the Hohe Tavern south and west of Salzburg mentioned by Dr. Pough but many of the localities are inaccessible except for special trips. I dare say that the bicycle after all is a pretty good vehicle for mineral collecting in Europe. In a car you are likely to go too fast to appreciate just what is worth while investigating and what is not.

I had one very definite objective which I intended to visit at the hazard of all domestic relations and that was Baveno in Italy. I was hipped with the desire to get a Baveno twin right out of its own cradle. After a circuitous trip through Innesbruck and around the Italian Lakes, Garda, Como and Maggiore, I finally came to the quarry about midway up the shore of the last lake. Italy was hot and I think one of the hottest spots in Italy is the gigantic brown granite quarry at Baveno. I parked the car as near as I could to the quarry, promised my wife I would be back in two hours, and started for the quarry. After going a mile and a half, (I had thought it was a quarter of a mile away), I got into the quarry. I have never seen quite such a big operation as this one. Gigantic granite blocks are strewn all over. Specimens are pretty hard to find and they were mostly quartz. I did get some specimens that I thought were Baveno twins and I got some others that I did not recognize. When I got home I found the ones that I did not recognize were Baveno twins. Such is the experience of the rank amateur.

I had had a very smiling and pleasant encounter with the custodian of the property who could not understand my English and of course I could not understand his Italian. He seemed possessed of the idea that volume and speed were the things that would put over his message. Of course the faster he talked the less I knew what he was talking about but I did get the idea that he was a very pleasant chap and wanted to talk very, very much to a stranger. Since three hours had elapsed since I started, I tried very hard to break away. My method was, every once in awhile, to point down to the valley and in a pleading voice say, "Mia signora. Honk, honk."! He would grab me by the arm and point dramatically to the hills. Finally he dragged me up about a quarter of a mile to where there had been a mine, long since abandoned, which he informed me contained nickel, lead and pyrite. It was an interesting deposit which had been shot up though a cleft in the solid granite, and I got some massive specimens.

From Italy we went to Switzerland and sampled some of the toughest roads known to man. I had hoped that in going over the Simplon Pass I would come to the inlet and outlet

of the Simplon Tunnel where I could possibly get some of the famous Simplon specimens from the tunnel dumps. The Simplon Pass, however, does not go anywhere near the Simplon Tunnel. Between Brig and Visp I procured some rather indifferent specimens of aragonite and quartz coatings in very decomposed limestones and that is just about all I got in Switzerland.

From Geneva we went to Nice through Grenoble and I was amazed to find that great sector in France, and also further on through to Marseilles, a vast unproductive mass of mountains with a few cork trees and a few vineyards in the infrequently watered valleys. This two hundred and fifty-eight miles was one long continuation of hairpin turns that constitutes the road through the Maritime Alps and a dozen stops at road cuts and quarries did not produce a specimen worth taking.

At Grasse, north of Nice, I collected some interesting specimens of banded stalactites which had formed in crevices exposed on the face of a large quarry. This was my last specimen save for a small quartz crystal out of the cell of the Count of Monte Cristo in the Chateau d'Iff in Marseilles harbor.

We found that we had taken just about twice too much baggage. The rear end of the car was way over loaded and after reluctant weeding out I had to sneak my various specimens underneath the seats. There were a number of sections that I would have loved to visit but a trip of this sort must be a compromise between art galleries and dump heaps and the time at your disposal. but if one is really after minerals too much time cannot be put into planning your trip ahead of time and getting adequate information, and really the only worth while information that one can get is from one who has been over the ground before and can tell you that this or that three hundred mile trip is not worth the exertion involved. I found nothing but courtesy on the entire trip and whether superintendents or miners a little pleasantry goes a long ways even though the recipient has no idea whatever of what you are talking.

You will confer a favor by mentioning ROCKS and MINERALS when writing to advertisers.

Tell your friends of the many interesting articles that appear regularly in ROCKS and MINERALS. He will appreciate the information and will also become a subscriber. We will appreciate the favor, too.

FEDERATION SOCIETIES TO HOLD CONVENTION

A two day convention of the California Federation of Mineralogical Societies will be held in Bakersfield, Calif. Jan. 2 and 3, 1937. A large display of minerals, gems and lapidary equipment will be featured. A number of talks on subjects of mineralogical interest will be given, while field trips to mineral and fossil localities and nearby oil fields will be made.

John Melhase, 675 Vincent Ave., Berkeley, Calif. is President of the Federation.

COLORADO MINERAL SOCIETY

The Colorado Mineral Society has recently been formed in Denver. It is a nonprofit educational organization whose aims are to promote the study of Colorado minerals, rocks, gems, fossils and to encourage mineral collecting as a hobby and to conduct public meetings, lectures and field trips. Meetings are held on the first Friday of every month at the Colorado Museum of Natural History, City Park, Denver, Colo.

Richard M. Pearl, 749—16th St., Boulder, Colo., is Secretary-Treasurer of the Society.

THE GOODSPRINGS DISTRICT OF NEVADA

By W. SCOTT LEWIS

The region about Goodsprings, Nevada, has been called the best, although one of the least known, collecting districts in America. The mountains are literally dotted with mines, some producing copper, but more often valuable because of their production of lead and zinc ores. It is rather strange that so little attention has been paid to this locality in view of the fact that is is easily reached from the main paved highway connecting Los Angeles with Las Vegas and Boulder Dam and extending northward to Salt Lake City. Collectors coming to southern California by this route (Highway 91) should turn north at the Jean Service Station, driving seven miles over a graded but somewhat rough and dusty road to the town of Goodsprings. Here days can be spent to good advantage visiting the various mines, looking over dumps, exploring prospect holes and climbing up and down the ridges and canyons.

Last May, having to visit Boulder Dam on business, I decided to take a few days off and devote them to a careful study of a limited area as I have found it much better to work slowly and carefully in a small section rather than to rush around trying to cover a large district in a haphazard way. I choose the Yellow Pine and Prairie Flower mines because of the large number of interesting minerals that have been produced there and because they are close together and easily reached from one base camp.

When my companion and I arrived at the Yellow Pine Mine, we found that it had been closed down for some time and the buildings were deserted. However this proved an advantage in one way as the wind was blowing a gale, making it practically impossible to put up a tent. Finding the door to the tool house unfastened we proceeded to move in, an action that is probably not to be recommended to collectors in many parts of the country but which is usually quite alright in remote sections of the desert. As the gale lasted all night this corrugated iron tool house proved a blessing. The only disadvantage was that a loose piece of iron roofing beat an incessant and machine gun like tatoo, while to add to the din at least a quarter of the entire roof was lifted up from time to time and then snapped back into place with a report like a battle ship going into action. But to a veteran collector such incidents are merely part of the game, and the next morning the wind died down and a brilliant desert sun combined with air like the proverbial wine made us wonder how anyone can bear to live in a stuffy city and breathe carbon monoxide gas all the time.

While we were making a preliminary examination of the dump, we heard a car approaching up the sand wash, and this proved to be the man in charge of the mine, who merely laughed when we told him why we moved into the tool house. This Mr. Barns proved most helpful to us in identifying various ores and when we left, he presented us with a magnificent specimen of calamine replacing dolomite that weighs about 25 pounds, and also with a very large specimen of high grade hydrozincite and a smaller but very clear piece of smithsonite from which a number of beautiful stones could be cut.

The dump of the Yellow Pine Mine, when viewed by sunlight, appears to be covered with millions of tiny glistening frost crystals, but careful examination shows these to be minute calamine crystals on bits of ferruginous smithsonite. All about us was material to gladden the heart of the collector. In one place we found a quantity of yellow jarosite, while near it was a pile of malachite of commercial quality. Here and there on the dump were brilliant fragments of red ocher while yellow limonite was easily distinguished from the

jarosite by its more orange color. A number of small pieces of hydrozincite were picked up but it was evident that very little of this valuable ore reached the dump.

A short distance down the hill were more buildings and another large dump and here we found many more treasures. Near the ore bins we picked up a quantity of calamine which had replaced dolomite and which looked entirely different from most of the calamine I have seen. The color was dull gray or grayish brown and it often occurred in layers and in some cases these were partially separated with spaces between. On the edge of the dump we found a number of pieces of interesting dolomite breccia, but the find of greatest interest was a green mineral which proved to be a form of cuprodescloizite. This occurs as a green coating in crevices in rocks and the appearance is different from the material ordinarily seen. Another interesting mineral of which we found only a small quantity was cerussite. Most of this was massive or only partially crystallized, but a few small specimens were composed entirely of masses of crystals. We also found a few pieces of botryoidal smithsonite but good specimen material was rare.

The Prairie Flower Mine is located somewhat farther down the slope and collectors using the topographic map will find that the road has been changed and now comes up on the opposite side of the mine. At the upper dump we found a quantity of galena, some large pieces being pure and others consisting of rock with nodules of galena scattered through it. The lower dump proved of special interest as we found a quantity of material taken from a cave which had once been an underground water course. All of this rock was coated with aragonite which took many different forms, the most interesting being masses of needle shaped crystals. It proved somewhat difficult to remove them from the larger boulders with a chisel without destroying the crystals, but a number of very interesting specimens were secured illustrating all of the various forms.

Among the minerals collected at the Prairie Flower Mine was a yellow coating which has been found to be a vanadinate, probably descloizite. It occurs as a yellow film coating other minerals and never as a distinct mass by itself.

Perhaps the most interesting specimen of all will doubtless be found under a large pile of stones by the next collector who comes along. It consists of the remains of a huge rattlesnake. He objected to our presence on the dump and decided to fight over a fine specimen of aragonite. This was the only snake seen on the trip and we didn't have even a mosquito bite to annoy us during the time we were at Goodsprings.

Among the lesser mines visited, all within easy walking distance, was the Blue Copper where we secured a quantity of medium grade chrysocolla and many interesting specimens of slickensided rock. Farther up the same canyon was the Middlesex Mine which had been abandoned for many years. A great deal of galena was scattered about on the dump and much of this was covered with a gray coating of anglesite. The Alice Mine, located on a high ridge above the Yellow Pine, yielded some rather poor aurichalcite but otherwise proved of little real interest.

While the minerals listed above do not begin to represent the entire number that have been produced at the Yellow Pine locality, we felt well repaid for our brief visit and left with lame arms and an overloaded car, determined to return at the first opportunity and extend our study to another of the various groups of mines that are located within easy reach of the little town of Goodsprings.

Representation . . .
in a high class mineralogical journal like ROCKS and MINERALS is a business asset of inestimable value.

A TRIP THROUGH A LEAD DITRICT OF MISSOURI

By Daisy Patricia Boyer Stockwell

The autumn morning I drove to southern Missouri to view the silica deposits near Crystal City, the "sink holes" of Valley Mines, and the lead mines of Bonne Terre, (meaning "Good Earth") was typical of the autumn weather we have in the Ozarks. The hills were robed in gaudy colors, a cool breeze rushed in the open windows of the car as we sped along the smooth highway, a pale blue haze like a gossamer veil hung low over the humped shoulders of the distant hills, huge white clouds, like billowing sails, raced across a torquoise blue sky.

A mile from Kimmswick we passed the so-called Sulphur Springs. We do not have any true sulphur waters in Missouri, they are, for the most part, salt brine or sodium chloride. This spring gushes forth from a hillside where puckered limestone ledges, adorned by cedar and oak frown down upon the highway. When the highway was cut through the hillside workmen unearthed hugh tusks, bones and other remains of the mastodon. When the mastodons roamed these hills they often met their doom in the quicksands of the marshy bogs where they were wont to feed on the luxuriant growth of foliage. This particular hillside seems to be the burial grounds for the mastodon.

The brine waters of this spring pour out into the marshy bottom land where bullrushes grow in abundance and cradle the nests of the red-winged blackbirds that inhabit this marsh land every spring and summer, their red-winged ebony bodies, gay splashes against the green.

We passed the rural town of Barnhart and reached the open country where farm homes dot the sloping hills and cattle and sheep graze contentedly in the fields and meadows. We passed through Pevely and its acres of orchard land, the apple trees slumped over with their burdens of rosy-cheeked fruit, and came into the prosperous village of Herculaneum with its great mills for the smelting of the silver-lead ore brought up from the St. Joseph Lead mines in Bonne Terre. The mills are located on the limestone ledges over-looking the Mississippi river and are owned by the St. Joseph Lead Company. The brick smoke chimney towers three hundred and sixty-five feet in the air. In the mills the ore is smelted and the silver separated from the lead. The bars of silver are stacked in rows, each bar about twelve inches long and four inches thick. At night I have often stood on the hillside over-looking the mills and river, and watched the moon, an orange globe in a smoke black sky, come up over the dark outlines of the buildings, the fires of the mills running full blast, the windows brightly illumined. Often a car of fiery liquid would be brought from the building and tugged to the summit of the mountain of slag and its load of redhot lava, streams of red against the black background, poured out and allowed to cool.

Six miles from Herculaneum a cut in the hillside revealed layers of blue and grey slate and shale. We reached the bluffs of yellow and white sandrock that canyon the roadway, the car a minute object on a grey ribbon of road. Crystal City is the home of the largest glass works in the United States, its factories are a branch of the Pittsburgh Plate Glass Company. Workmen employed by this Company have built a track and tunneled back into the bluffs of sandrock to dig out the fine white silica sand used in the manufacturing of their glass. Crystal City is one of the famous twin cities. The state

highway 61 divided Crystal City from another modern city called Festus.

As we left the twin cities and rode deeper into the hills, frame houses were seen less frequently, log cabins chinked with mud, a stove pipe protruding from one sidewall, ruled supreme. Field of sugar cane and stumps were seen. We passed the road that leads to the silver mines in Valley Mines. Leaving the highway we headed the car into the hills over a country lane. The lane was deep rutted, made of hard packed clay of reddish hue, colored by oxide of iron. Mineral blossoms and bits of tiff had been scattered over the road to make the road passable in the winter months. We entered a valley, the rutted roadway bordered by a meandering rail fence, fields of sugar cane on either side of the road, the bright green leaves glistening in the sun. A sugar cane press was seen standing in the yard near a log cabin. A horse or mule turns the press by going around in circles. The hill folk boil the liquid from the pressed sugar cane into a rich brown molasses they call sorghum. We reached an open field at the edge of a forest of tall walnut trees, parked the car and left it to follow a path that led us past a rotting rail fence and across a wide shallow stream that reflected the glory of the orange and golden leaves of the hickory and sugar maple trees. The trees were tall and straight and the path became a continuation of the rutted road.

Miles back in the deep timber we came across a huge slab of limestone with bits of galena showing in the surface rock. Wild boars were encountered in an open field and we made for the timber on a run. Back in the heart of the hills the road led us to a small hut beside a "sink hole". Two burly, unshaven men eyed us suspiciously as we mounted the pile of red clay, tiff and large slabs of yellow calcite crystals, and gazed down into the sink hole. My companion estimated the hole to be about one hundred and fifty feet deep. These sink holes made by the land owners for the mining of lead ore are to be found everywhere in the hills. They are worked until the paying vein or pocket of ore gives out and then another hole is dug and worked. Seldon are these cavities filled up and often prove disasterous to both human beings and cattle.

When a land owner more prosperous than his neighbor sets up a washer beside his small mine, he hires several men to dig with him. The ore is then mined and brought to the surface of the ground by means of a windlass. A man at the washer has a small hammer called a "pick-a-wee" which he uses to pick the rock and debris from the ore. He then throws the ore into a washer, a box-like affair with a screen attached to the bottom which holds the large chunks of lead, the smaller pieces dropping upon a screen further below, allowing the silt and mud to run down a trough at the bottom of the washer. The miners tell of encountering crystals of bright hues in the pockets of the lead ore.

I collected chunks of yellow calcite which is called "glass tiff" by the miners, and pieces of lead ore for my collection.

Beyond the hut the road ended and we found it again as a pathway strewn with brown and copper colored leaves as it led us between giant oaks. The path came to an abrupt end in a valley where a one room white school house nestled amongst the trees by a dry stream bed.

Ten miles farther south are the cavernous lead mines, some three thousand feet below the surface of the ground, of Bonne Terre. The crushed up rock brought up from the mines (waste dumps) are many feet in height and can be seen looming above the hills for many miles about Bonne Terre.

"ROCKING" WITH CAMP GIRLS IN NEW ENGLAND

By MISS EVELYN WAITE

During the past summer spent as Nature Councillor at a well-known girl's camp in the Berkshires, I had the opportunity of making a number of very interesting and profitable trips to nearby mineral localities, accompanied by groups of girls and councillors from the camp, who became interested thru the small collections which I had brought from home and displayed in the camp museum. One of the most interesting exhibits proved to be a chart illustrating some of the minerals used in the manufacture of fireworks as suggested by an article in the ROCKS and MINERALS magazine for July, 1934, page 101.

Although a comparative newcomer to the ranks of "rockhounds", I have already visited many well-known localities. Undoubtedly I passed by many good specimens. However, I always managed to bring home something of interest and more than needed for my own collection. The duplicates I used for trading and even gave away many to the girls at camp, who quickly became eager to make their own collections, with the result that it was not at all unusual to hear little seven year olds describing "that beautiful pink Rhodonite", the difference between Calcite and Quartz, etc., much to the amusement of their elders. Many an hour was spent with these youngs'ers assorting, chipping and labelling their specimens and arranging them in orderly fashion in their various boxes. Many of them learned to make the simpler tests and to identify a fair number of the common rocks and minerals. Sandstone and Quartzite seem to be the most abundant in our particular locality, tho' many other well-known types are within easy driving distance.

The following paragraphs are a record or diary made of trips taken to some localities, many of which the writer hopes to visit again in the future after her knowledge of mineralogy has increased enough to enable her to recognize some of the more rarer minerals, a goal which seems far in the distance. One wonders how one can ever learn enough but one can always "keep on digging away" — excuse the pun, please.

Friday, June 26th:—

On the way up to camp, I stopped overnight with friends in New Milford, Conn., and early the next morning Miss Dorothy Berry and I set out in her car to find the Cyanite locality near Judd's Bridge, as described in the Conn. State Bulletin, No. 51. After one false try, we picked up the young son of a friend of Miss Berry who easily guided us to the spot which would have been difficult to find without aid, as it was at a blind turn off a heavily wooded lane. We found many pretty pieces of the bladed blue crystals around the old waterfilled pit, cut in the Quartz outcropping on the hillside, and then dug more out of a dirt bank, which had evidently been a part of the old dump. Rain soon put an end to our activities so we drove back, transferred our cargo of rocks and the writer set off in her own car for the camp at Monterey, Mass.

Wednesday, July 8th:—

After supper, five councillors; Ott. Kroeber, Mt. Vernon, N. Y.; Betty Perkins, Troy, N. Y.; G. Beilfuss, Oyster Bay, L. I.; Marian Little, Uxbridge, Mass.; in the writer's car set out for the abandoned Emery Mine at Chester, Mass., which we had read about in the July 1936 ROCKS and MINERALS magazine. Following the beautiful Jacob's Ladder trail, we soon came to the outskirts of the village of Chester, where we were directed up a dirt road to the right. After trying 3 different roads, one of them the

very steep and rough Chester Mt. road which even the Ford took in "low", we finally drove back into the town where we again asked directions. Following these we turned back, crossed an old iron bridge to a house where we were directed up the hill, along an old lane. Nothing daunted, we tried again and again until darkness almost overtook us, high up on the wooded mountainside. Fortunately, we had flashlights to light our way down. Disappointed, but determined to try again at the first opportunity, in the meantime trying to get more definite information, we returned to camp.

Wednesday, July 15th:—

Another group of councillors: G. Beilfuss, Oyster Bay, L. I.; Betty Perkins, Troy, N. Y.; Jean Herschberger, Philadelphia, Pa.; Marianna Washer, Chicago, Ill.; started out after supper for a short exploring trip to Canaan, Conn. Along the main highway (Rt. 7) we found some interesting and odd looking limestone boulders which proved to contain a little Tremolite—and in a pasture—another contained a bit of blue Cyanite. A beautiful sunset soon brought the darkness which ended our search for this time.

Monday, August 3rd:—

Four of the councillors and the writer left camp about 4:00 P. M. for parts unknown, described in the ROCKS and MINERALS magazine of March 1936, as the famous Rhodonite locality at Plainfield, Mass. We made a late start because of the extreme heat, so picked up some fruit in Pittsfield, determined not to waste daylight hours eating supper, and arrived at Plainfield about 6:00 P. M. where we easily found the open pits as described, also plenty of pretty little Garnets and Quartz but only a few chips of pink stone. Finally, in exasperation, Miss Betty Perkins of Troy, N. Y., picked up one of the many blackish boulders lying around and heaved it at another rock and lo', it burst open, disclosing an interior as pink as a luscious watermelon, much to our surprise and delight. After gathering as much as we wished to carry, we left. We stopped in Cummington, where Miss Bee (Grace Beilfuss of Oyster Bay, L. I.) secured from some men at a sawmill, a few rough finished blocks of wood on which to mount a couple of rounded glacial boulders of granite for book-ends. It was then about 8:00 P. M., but instead of going back to camp we decided to go on to Barrus farm at Lithia, which we had also read about as producing nice minerals. This was only a few miles further on. On the way we stopped to wash up in the Westfield river, where Miss Bee slipped in, getting wet almost to her knees, while looking for rocks in the river bed. With much laughter, Miss Ethel Cowles (of Philadelphia) and the writer helped her out and into the car and on we drove —shoes drying on the windshield and socks held out the window. On arriving at the farm, we were cordially greeted by Mr. Barrus who showed us as much as possible in the fast darkening twilight and then took us inside and showed us many more interesting and beautiful specimens, as well as some fine old antiques from Revolutionary times and earlier. One of these was the hand-made surveyor's instrument with which this farm was laid out, and a hand-made round, wooden canteen used by one of his ancestors in the Revolutionary War, and still in perfect condition. He also very kindly gave us some nice specimens of the pink, lithia Mica, some Pyrite cubes from Chester, Vt., and blue and green Tourmalines from the Quarry on his own property, and invited us to come back another day to dig for ourselves.

After a most interesting evening, we regretfully tore ourselves away about 10:00 P. M. and started back thru the moonlight for our long trip to camp over unknown roads and coun'try, arriving safely about midnight. Unfortunately, we were not able to re-visit the farm this season; so have that pleasure to look forward to another year.

Sunday, August 9th:—

While most of the camp went to

church, the writer, accompanied by Miss Mary Whalen of Great Barrington, Mass., and Miss Alice Allen of Peekskill, N. Y., drove to East Canaan, Conn., looking for the Allyndale Quarries, which we easily located. On our way to the Quarries, we stopped at the old crushers, where we found plenty of the bladed Tremolite in limestone. At the Quarries, which were almost a mile back from the main road, we walked along the tracks on the dumps, where we discovered plenty of pretty specimens of Chalcopyrites, Phlogopite, Clinochlore, Galena and bladed and fibrous Tremolite in the various colored limestones. After a half-hour's stay, we hustled back for dinner, much impressed by the prettiness of the stones and the wonderful odor of the tall pines all about us.

Monday, August 10th:—

This morning we piled the Juniors and the Midgets into the station wagon and drove them over to an old stone pit on the Otis road, where they had their first experience "rocking". They had a grand time looking around and climbing over the huge boulders left behind by the glacier as it withdrew from this part of the country. Not much was found in the mineral line, beyond some white Quartz and a little Mica, both Muscorite and Biotite, and a few bits of Pyrites.

In the afternoon, I took a group of "Inters" over to the East Canaan Quarry where they spent two happy hours collecting the pretty specimens before-mentioned at this spot, as well as some silky-fibrous Tremolite. We later went down into the Quarry itself but were driven out by an approaching thunderstorm, the black clouds looming ominously against and over the pure white limestone about us; an impressive and awe-inspiring sight. We later cooked our supper under the overhanging rocks at Campbell's Falls, a few miles further on.

Tuesday, August 11th:—

In the afternoon I drove another group of Inters. over to Chester where we examined the interesting mineral exhibit in the Library before going over to the river bed below the old Emery mines, (which I have not yet located). Here we found numerous interesting rocks containing Epidote, both in crystals and in tiny masses in Gneiss, Serpentine, Hornblende, etc., and in the stone wall one rock containing a fine strip of pink Mica, which we broke up and divided between the girls. Well pleased with our finds (tho we probably missed plenty unrecognized) we drove back to camp, an ever increasingly enthusiastic group of rock hounds.

Thursday, August 20th:—

Took the Juniors and the Midgets to the Allyndale Quarries, their first visit to a real quarry and felt well repaid by their interest and enthusiasm in collecting at this pretty spot. Of course all enjoyed the supper cooked over a fireplace made of blocks of pure white limestone by Miss Betty and Miss Alice.

Sunday, August 23rd:—

After driving some of the campers to church, I drove on along the road towards Great Barrington to look at an outcropping of blue stone which I had frequently noticed as I drove along this road. Some of it was very weather-worn and rapidly turning to sand, leaving clusters of radiating Tremolite standing out like stars, presenting an interesting appearance. On looking further at a peculiar looking sand bank, discovered it to be studded with bunches or bundles of fine cream-colored fibrous Tremolite, apparently left in position as the stone holding it weathered to sand, for as I dug in the soft sand I struck solid rock again only 8 to 10 inches below the surface. Some of these clusters were almost as large as my fist, with needles 3 inches in length and all were very brittle and discolored. In some places the Tremolite stood out from the bank on pedestals, like mushrooms, the sand having been washed away by recent rains, while in others it formed veins in the rock sometimes 2 inches in width. This

turned out to be a most interesting spot and well worth the wet feet (as it was a wet morning) and the amused glances of the many passers by, at a single female digging in the bank.

Monday, August 24th.

After supper Miss Ottalie Kroeber of Mt. Vernon, N. Y., (Miss Ott) and I drove to Lee, Mass., to visit the famous Lee Marble Quarries, which we found interesting but not prolific in the mineral line, perhaps because we did not know enough to recognize what we saw. The writer had the amusing experience of starting a small rock slide by a sneeze, which proves the necessity of care in clambering around old Quarries and digging. Again a beautiful sunset ended our explorations, and a bright moon watched us home.

Sunday, August 30th.

While climbing Ascutney Mt., in Vermont, with my cousin Miss Florence Smith of Windsor, Vt., and some friends, we came across an outcropping of smoky quartz crystals as large as a thumb, protruding from a seam in a light colored Granite, which seemed to be the common rock of this section. Not having a hammer we were only able to get a small group of the crystals, much to our disgust, it being the first time since the writer became interested in 'rocking" that she forgot the hammer on such a trip.

Monday, August 31st.

On the return trip to New Milford, Conn., I stopped at the well-known Chester, Vt., Pyrite location, operated by the Vermont Mining Co., as described in ROCKS and MINERALS, July 1936, where I was graciously given permission to collect all I wished. I went away well laden with Pyrites and shining green Talc, much pleased to have had the good fortune to visit this interesting mine and watch its working.

A little further along a stop was made at the Marie Hill Farm in Simonsville, Vt., where I was pleasantly received and shown many speci-

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SINCERE HOLIDAY GREETINGS from J. A. GRENZIG

mens collected in that locality and was told of a number of interesting places to visit. A gift of a specimen of green marble from a newly-opened mine at Andover, Vt., and a piece of gold-bearing marble from Colorado, was given me. Unfortunately time and weather prevented more visits that day and I was soon on my way, running into heavy storms and teeming rains, which were very interesting to watch approach, but which made driving very difficult and treacherous on the mountain roads, tho' New Milford was reached without mishap, about 7.30 P. M.

Tuesday, September 1st.

The next day the writer and Miss Berry started out to find the old Quarry at upper Maryall, Conn., as described in "Conn. Minerals". After much winding in and out over the country roads we finally came to a farm house where we were told the Quarry was near by but that it was not accessible at this time of year and further search was discouraged. So there was nothing else to do but drive on in search of another spot, which we found near South Kent Station, Conn., at an old Iron Mine, or rather on the dumps, which were much overgrown and hard to recognize. We soon saw that others had preceded us only recently, by the freshly chipped rocks in the field, so feeling much like Sherlock Holmes we followed the clues. We found some nice specimens of Limonite, Quartzite, and on chipping at one good-sized boulder standing in the field, found pockets in the Limonite covered and lined with tiny quartz crystals, presenting a very attractive appearance.

Thanks to Miss Berry, the writer has enjoyed many pleasant drives about Connecticut and has visited numerous other old mineral localities, among them; "The old Newgate Prison and Copper Mine" at East Granby, the old Mica mine at Maryall, and a Garnet mine at Roxbury Falls.

After this extended trip, the writer with the rest of her family spent a couple of weeks at Port Jefferson, L. I., N. Y. where many pretty pebbles were collected and put aside for future study.

The writer hopes to increase her knowledge of rocks and minerals as much and as soon as possible, so as to enable her to identify and classify the many specimens which now remain a mystery and to help her to recognize the many others which have undoubtedly been passed by on these excursions. The trips were suggested mostly by articles read in ROCKS and MINERALS during less than a year's subscription and a few odd copies picked up in various places, such as the Pleasant Valley Bird Sanctuary in Lenox, Mass., where the story of the Hawley Mineral Belt was read.

Earlier in the season a teacher of Geology endeavored to discourage the effort to introduce the study of Rocks and Minerals into Camp Life as being too deep and weighty a subject. But the writer, being an enthusiastic collector, tho' a newcomer, saw no harm in aiding and encouraging others to collect if the desire was created by the display of collections and in passing along to others the small knowledge already acquired by her even as she added to her own. It would seem as if she were justified in this assumption by the tremendous interest and enthusiasm created, and it is hoped some of these youngsters may go farther in the field and remain ardent supporters of this interesting and instructive hobby. Certainly, it must be conceded, that a study of the parts of the very earth beneath our feet must be a fitting and essential part of the study of the great Outdoors, and a fitting prelude to the deeper study of plant and animal life.

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A DRUSY AGATE FIND

By E. A. SOUTHWICK

One of the most interesting features of collecting rocks and minerals is the discovery of new localities that produce desirable specimens, or the picking up of some rare item in an old locality. The writer has been fortunate in this respect, having chanced upon a number of producing localities in the past four years where very good material can be secured, and can now report another, recently found.

With R. A. Schumacher, an enthusiastic local collector, as a companion, a trip was made to Jefferson County, in central Oregon, where we scouted around for some time, and eventually, on the side of a low, rocky hill, hit upon an outcropping of nicely colored agate material that is different from anything yet reported in Oregon, except for an occasional specimen. At least, neither of us had previously seen or heard of any such deposit.

The material is of drusy agate—agate covered with minute quartz crystals. It is of the banded type, or most of it is banded, with agate and sometimes common opal, fastened to a brown claystone matrix, the bands following the contour of the matrix and being of distinctly different colors, as a rule. Red and white are the predominating colors. The drusy surface is mostly white, pink or red, but occasionally is yellowish or some other shade.

The deposit is not of great extent, occurring rather sparsely over an area about 100 yards across in each direction. Not all is of specimen quality, some being deficient in color contrasts or the agate coating on the matrix being of insufficient thickness.

It occurs in igneous rock somewhat resembling brown jasper in color and hardness, but which is a sort of claystone so impregnated with silicon as to be almost as hard as the drusy-surfaced agate attached to it. The agate has filled cracks and pockets in this material, sometimes being one-half inch or more in thickness and sometimes less, frequently covering considerable surface.

This material makes nice cabinet specimens when polished on the sides, sawed into slabs and polished or made into paper weights, bringing out the banded part of the agate and the attached matrix and leaving the drusy crystal surface as Nature fashioned it.

The matrix material is similar to the so-called "Thunder Eggs" of the same locality, but instead of the agate being in the center of nodules, it is on the outside, but not in nodular form, having evidently formed in cracks without filling the entire space.

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A FIELD TOUR IN SOUTHEAST WYOMING

By CLAYTON JUDY
Douglas, Wyoming

One naturally likes to know more about his own state. To this end we planned a few days trip through the rich geological field of Southeast Wyoming. We were down in Colorado and had four of five days in which to make our way back to Douglas, our home. At Fort Collins, Colorado, we took highway 287 for Laramie, Wyoming. Our first stop was at the alabaster quarry close to the Colorado and Wyoming state line. Here a workshop was in operation under the direction of a very enterprising young college student. He was turning out a very interesting lot of souvenirs, which seemed, from the number of cars stopping, to meet the demand of a vacationing public. Being in search of silicated material and materials we soon pushed on north to Tie Siding, a town marked on the highway by just two filling stations. Here we visited the site of one of the old copper mines. The mine has been inactive for some years. A watchman is maintained on the place. From him we secured samples of "grass root copper", a copper boulder carrying native wire copper, which on the top side resembled copper rivets well beaten down, and through the rock provided the binder to hold it together; also beautiful specimens of rich copper glance.

After a night in a tourist cabin in Laramie we drove forty miles northeast to visit famous Iron Mountain. The road was poor, the country desolate, and the Mountain, which is only an iron dome upthrust, not very inspiring to behold; But there is a wonder about it all. A mountain a mile and a half long, half as thick, and several hundred feet high, solid mineral, left alone by man, because he has not discovered the key by which to unlock the complex ingredients. We secured our samples and then returned the forty winding miles to call it a day.

After another night in the tourist camp we started west for Saratoga. The new paved road to Centenial was a delightful contrast to the travel of the prevision day. From Centenial the fine gravel road, maintained by the Federal Forest Service, makes the crossing of the Snowy Range divide a real pleasure and an inspiring thrill. Near the top we stopped at University Camp, a magificent location where the University of Wyoming is building a center for summer students, that is destined to be world famous. One is tempted to spend weeks here instead of just hours. It was with reluctance we hurried on.

Our next quest was an agatized wood, a sample of which had come to me for polishing a few weeks before. It was pure white and in texture much resembling ivory. It had been a surprise when I discovered it to be agatized wood. Naturally I wanted to secure a few pieces. At Saratoga I saw some pieces laying on a fountain wall at the Texaco service station The color was not all white but the agate was of the same texture. That evening after interviewing four men I had a field trip for the next day arranged. Under the leadership of justice I. M. Conness, we searched the sage brush hills and found a liberal supply of small, sand polished pieces of agatized and opalized wood. We could not locate any large pieces and this was our disappointment. Later another friend took us out to where a road crew had torn out some larger pieces and we did get several chunks ranging from one to four pounds.

The peculiar feature in this find is the high polish nature has given to this opalized wood, running in color from pure white through all stages of translucence to jet black. Most of our find were small pieces, running in size from one half inch, just right for a small cabochon, up to two or three ounces.

To complete the trip we visited the famous Sweetwater[1] agate beds just off the highway between Rawlins and Caspar, Wyoming. This place is visited by people from all over the nation. At three forks corner or Muddy Gap one turns west towards Lander for twenty miles. Here we leave the highway and follow a lane that is the outlet for a number of ranches lying north of the Sweetwater River. Seven miles of country lane brings one to the edge of a prairie, a slightly sloping sagebrush plain, eight or ten miles long and about six miles wide. This is the Sweetwater agate bed. The soil is a decomposed granite in which, from some source, a liberal supply of small agates and jaspers have been supplied. In eroding, the agates and jaspers are left on top and the wind and sand through the ages polishes them. They have a distinct three sided shape and contain black, red, and brown moss. We arrived in the evening, put up a small tent and slept in the quiet of isolation. Next morning, after an early breakfast, we hunted these beautiful wind polished agates until it was time to head for home.

Our car was loaded with the spoils of our trip, our hearts were glad from the four brief days of freedom, and we felt closer in tune with Him who made these wonders for our pleasure and enjoyment.

Editor's Note:— See *Sweetwater River Moss Agates* by G. B. Ellermeier in Sept. - Oct. 1936 ROCKS *and* MINERALS, pp. 172-173.

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THE LIMESTONE QUARRY AT RUDERSDORF, GERMANY

By WENDELL O. STEWART

During the past summer I had the opportunity to take a four month's collecting trip through Europe. I found that Rudersdorf, East of Berlin, was one of the most accessible and interesting mineral localities for the foreign visitor. The town can be reached from Berlin by auto, train, street car, or by boat on the Spree River. The trip took me one hour by train.

An excellent interpreter was furnished me free of charge by the Berlin Tourist Information Office. We first visited the new recreation halls for the employees. They are of Monterey style, stucco inside and out, natural wood trim, and wrought iron fixtures. The four walls of the dining room were covered by a series of fresco pictures depicting very artistically the six important phases in the miners' lives, children at play, youth camp, military training, marriage, work, and retirement in old age.

The building was equipt with bulletin boards, radio, dining room, kitchen, showers, lockers, and a unique system of drying the wet and muddy miners' clothing. Each man has a rope with a hook on the end on which he hangs his suit, pulls it to the ceiling on a pully, and locks the other end of the rope to a rod along the side of the room.

The limestone is quarried in open cuts on a dome shaped hill, the strata having a 25 degree dip, and showing marine fossils, wave and wind ripple marks, and many concretions of dark brown limestone.

After clearing off the forest, only two to four meters of soil have to be removed to expose the limestone. Thirteen hundred men are employed and receive from 24 to 30 Reichsmarks a week. Tunnels are driven from the open quarry and the cliffs undercut and toppled down onto the floor of the quarry by dynamite. First, the large pieces suitable for building stones are removed to the stone cutting and trimming sheds in the quarry. Secondly, the smaller pieces for small building stones and street paving. And thirdly, the remainder is sent to the kiln to be made into cement.

The Olympic stadium, bell towers, incidental buildings on the Olympic fields, and the paving for the new Reich roads were constructed of limestone from the quarry. The road paving stone are 1½ by 1½ feet cubes and are set in dirt.

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A large quarry south of the present one is flooded and will be eventually drained and worked again. It furnished many large geodes of celestite and calcite crystals.

I collected crystals of chalcopyrite and iron pyrites, calcite crystals and celestite crystals in geodes, botryoidal limestone, travertine and fossils. Other specimens found here and on exhibit in the Berlin Mineralogical Museum include stalactites, ribband limestone onyx, red marl, satinspar, and many large fine geodes of celestite and calcite crystals.

From the rim of the quarry I saw a large map of Germany showing old Germany in light colored limestone and all parts taken away by the treaty of 1918 in iron stained red marl, with the slogan spelled out below "We stand for peace and justice". Beside this were five large Olympic circles and the words "Olympic 1936".

In walking through the side tunnels I found the air very cool because of the hot dry air outside. The porous wet limestone allows evaporation to proceed faster the warmer it is outside; hence lowering the temperature in the tunnels.

The guide furnished by the superintendent of the mine was most willing to show me everything and explain through the interpreter all question I asked. And best of all I came away loaded with specimens.

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We are offering some very nice Fluorite specimens from the Oscura Mts., of New Mexico. These specimens have light blue crystals of Fluorite, thickly scattered over a matrix of drusy quartz and barite. The crystals average around a quarter of an inch in size, tho many of them run up to one half inch. In many of the specimens the Fluorite is accompanied by small galena crystals which have a covering of cerussite and scattered over the cerussite are tiny, yellow descloizite crystals, best seen with a glass.

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P. S.—SAW YOUR AD. IN ROCKS and MINERALS.

A CAPE COD WEEK-END

(Two nurses combine mineral collecting with sight-seeing.)

By MISS HELEN E. WRIGHT

Whenever we can get a few days off from our duties, my friend and I go out on mineral trips. In this way, Schmitty (Miss Gertrude Schmidt) and I have visited many localities—both near and far—and have collected a large number of specimens. We have always wanted to visit Cape Cod, Mass., not to collect specimen (as none were known to occur there as far as we knew) but simply to tour the area. Finally an opportunity arrived and we took advantage of it.

In fine weather about 3:00 P. M., Fri. Sept. 11th, 1936, we left the hospital near Beacon, N. Y., in our Gypsy 2nd, and headed eastward. We made no local stops but rushed onward as far as we could go before dark. We stayed overnight about 40 miles out of Providence, R. I., so that we could tackle the city's maze in the early morning at our leisure before any one was up. However, quite a number beat us to it, but we managed to navigate through the city without much trouble. Then on through Taunton, Mass., where we got "lost" (a favorite trick of ours, getting lost in large towns and cities).

Our first real stop was at Plymouth Rock, for to go through Plymouth, Mass., without seeing the Rock would be a sacrilege. We found the Rock to be a greenish, brownish granite boulder about the size of an office desk, cracked and mended with cement for about one-third of its length. It was set in cement at the edge of high tide on a little gravel beach about 50 feet long. The remainder of the beach has long since been filled in for wharfs, and yacht clubs. Over the Rock has been built a classic portico of lovely pink granite which can best be seen in the base for the iron fence surrounding the Rock, especially on the beach side when the tide is out, as it was when we visited it. We clambered down to the tiny beach, for where there's a beach we must turn beach-combers. From there we could get a much better view of the Rock and we saw how its once rough surface had been worn nearly smooth as though many feet had stood there, where once the First Pilgrim had stepped. We picked up a few pretty pebbles from the beach, wondering if one of them could had been kicked around by a Pilgrim's shoe. Second thought brought out the fact that aside from a few big boulders strewn around, the beach probably was a sandy one back in 1620 and since then it had been artificially covered over. We pocketed our pebble, nevertheless, retraced our way to the street and continued our journey.

Driving along southward we passed a high bluff on the shore and just beyond it came to a good road leading to White Horse Beach, our next stop, where we arrived about noon. The day was misty and rather raw, so at first the beach was nearly deserted. We got out of the car and began collecting some of the beautifully colored pebbles strewn over the beach. Pink and reddish granites, epidotes, red and brown jaspers and a nice little moss agate were some of the specimens we found. The few people who were on the beach when we arrived, strolling along or chattering away, paid no attention to us. After we had been collecting for about an hour, I happened to look around me and then nudged my companion, saying, "Monkey see, monkey do." She looked around, then looked at me and smiled. For a large number of people were now on the beach and nearly everyone was collecting pebbles. They would pick up pebbles, examine them closely, show them to others and talk about them—no doubt wondering what it was all about. We hope some of them may turn out to be mineral collectors. After a little more collecting, we left and drove

back to the main north shore road.

We did not stop again for some time, though we drove slowly to take in all the sights as we went along. We passed over the new bridge at the northern end of Cape Cod Canal, high up over the big ditch in yellow sand. Cranberry bogs made us stop about 5 minutes as we never before had seen one. We were totally surprised to find those big red berries growing on such tiny stems, about 4 inches high. We thought they grew on 2 foot bushes. And then there were gardens, whole acres devoted entirely to flowers of all kinds. Even the wild flowers on the Cape seemed lovelier than those I saw elsewhere; perhaps it may have been that we saw varieties which do not occur at home. Yarmouth was especially pretty with its beautiful trees, gardens and old Cape Cod houses. There were evidences of quarrying on many of the stones in the walls and fences so they were probably brought in from the far hills though we wondered if some of them had not been cracked out of glacier boulders, long ago, by patient hands. They looked it. Pretty little blue ponds seemed to pop out at us around curves, or vistas of distant bays and dunes.

At last we arrived in Provincetown. My friend said it reminded her of little towns in Germany, with its narrow streets and houses standing with their gable ends towards the streets. Parking is done with cars far apart, alternating on both sides of the street, leaving room for just a single car to writhe through like a snake. Lord help you when you meet a car coming your way, which of course you do. But everyone is slow and good natured and you manage to wriggle out somehow. We climbed to the top of the Pilgrim Memorial Monument, a tower of Italian architecture, built of Maine granite, 252 feet high, on a hill about 100 feet above sea level. As it is the highest spot for miles around, the view from the top is magnificent; especially out over the bay dotted with ships and sail boats of all kinds. The tower has an inclined ramp stairway making it very easy to climb. (Admission 25c please).

Down again, we boarded the Gypsy and circled around and through the sand dunes and back via the same road we had entered Provincetown, as far as Orleans. There we branched off onto the south shore road, Route 28, to Falmouth. It began to grow dark as we reached Hyannis and above all things, a thunder storm came up. We were getting hungry, too, but thought we'd make the next town where we would also put up for the night. But we drove and drove and the further we went the harder it rained. There were no towns, no place to stay, and no place to eat. We passed little hamlets to be sure but every one had gone to bed, it seemed. At last we arrived in Falmouth before we thought we were half way there and yet it was only 9:00 P. M. There we warmed our insides with Boston baked beans, ham and brown bread. Then following directions, we took a winding road in the pouring rain to a little cottage where we stayed overnight. Almost everything had closed up for the season, the week before, and we were nearly out of luck.

The following morning we tumbled out into a misty dawn and travelled back to town for breakfast, but we were too early. We drove all around the town, out to the shore, and then back into town again and finally one restaurant opened. On inquiry we found we had just time to eat then travel 4 miles to Wood's Hole to catch the 8:20 A. M. boat to Oak Bluffs on Martha's Vineyard. We caught the boat, just in time. It was pretty expensive to take the car along, $5.00 each way for a three-quarter hour sail, and then 80c round trip for each passenger; but it would be nice to drive around the island. Furthermore, Gay Head, at the extreme western end of the island was about 25 miles from Oak Bluffs and we either had to bring our car or else charter a private vehicle.

All our friends, who had visited

Martha's Vineyard, told us we **must** see the colored **sands** at Gay Head and so of course the locality had to be visited. We found the sands to be not sands but clays — nice sticky gooey clays in red, brown, gray, blue-gray, greenish, white and black colors and of all shades in between. The view from the bluff was beautiful but no more so than that of the beach 200 or 300 feet below. A lighthouse was also near the beach.

We were soon down in among the clays. We have never seen Bryce Canyon except in colored pictures and the colored clays at Gay Head resembled the Canyon more than any other occurrence seen by us in the East, and we know our East. Of course the formations at Gay Head were on a miniature scale compared with Bryce Canyon. There were high bluffs separated by deep gullies; a few columns of clay topped by large boulders; and strata of different colors. The top stratum was brown in color and consisted of boulders cemented by limonite into a loose conglomerate; below was a layer of white clay cementing white quartz sand; below that was a gray clay which weathered greenish; next was a white layer a portion of which so nearly resembled concrete that we had to look at it closely to make sure. Beyond this bluff was another whose top stratum consisted of a large amount of sand gradually merging into brown clay; then gray; then black. Most striking of all was a brick-red prominence towering up among all the others as though it defied all poundings of storm and wave. This seemed to change to a deeper, more crimson, red below and finally near the bottom were traces of clay almost purple in color.

We were wandering below, along the beach, collecting pebble of different colors, when we saw something glisten in the blue-gray clay. On close inspection we saw it was marcasite, as small masses and veins in rock; also small groups of crystallized pyrite whose crystals were about 1/8 inch square. They were not found in other colored clays nor even in the gray clay that turned green on exposure.

The black clays were evidently colored by carbon as we found charcoal sticks and even big logs imbedded in it and in such vast amounts that they never could have occurred so except as washings from some prehistoric forest fire.

Most marvellous was the mixture of coloring near the bottom of the bluffs. There the clays were streaked and blotched in all manner of combinations as though some giant had mixed them all up like marble cake. This was caused in the following manner. During dry spells clay cracks form, very deep. Then during a wet spell, the rain washes clays of other colors into the cracks, completely sealing them up. Furthermore, the consistency of some clays, give them the tendency of weathering away in balls, which roll down into some of the cracks giving them a spotted appearance. Stress and strain of pressure bend the clay into fantastic designs and there you are—looking at something lots more messy than an artist's pallette, yet lovely because of the mass of it. We also found a small bench of pure limonite weathered out of one bluff just at the high water wark. (P. S. When you visit this place be sure to wear old clothes and especially old shoes; the clays will ruin good ones).

The beach was formed of smooth yellow sand and rocks which varied from tiny pebbles to boulders the size of a small house. Most of the rocks were quartzite and coarse grained granite; small amount of gneiss and trap rock were also present. We knew not if bathing was permitted and besides the weather was too cold, but we just had to take off our shoes and socks and go wading. The sky had cleared, the water looked so clear, clean and greenish-blue—just like the gulf stream,—so who could resist?

On the way out we noticed several places in the banks where clay had been dug out, supposedly for pottery. Back up on the bluff we stopped for

our last look. In the distance were the Elizabeth Islands, stretched out to form Buzzards Bay and the sparkling splashing water with its vivid blues and greens reminded us of Bermuda. Such is Gay Head and we think it is well worth a visit.

We stayed in Gay Head so long that we had to hurry a little and take the most direct route back to Oak Bluffs to catch the 2:00 p. m. boat to Wood's Hole. At the pier, we gasped to find we were supposed to have made reservations for the return trip. But again we were in luck. It was just past the tourist season and furthermore, because of misty weather the day previous, reservations were not heavy and we were allowed to cross, billed as extra freight and wished good luck. We had just room to squeeze in on board. When we docked on the mainland, we had to back the car off the boat down a very narrow gangplank. The ship's officers made all passengers get out of cars, except the drivers, so there could be no back seat driving. If you happened to back into the bay, well—the rest of the party could tell the story on arrival home. My friend solemnly handed me my ticket and kept her own. By watching the officers in front with one eye and the rear with the other and each ear listening intently to guiding instructions to the fraction of an inch, Gypsy and I actually reached the dock without a scratch. It was now 3:00 p. m. and we decided to make a dash for home that very day. We did, arriving at 1:30 a. m. Sun. Sept. 13th, without any mishaps. We had a most enjoyable trip and now, if you should ask us, we know all about Cape Cod.

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TWO "ROCK-HOUNDS" GO COLLECTING

By MARK M. FOSTER
Palo Cedro, Calif.

Last year the writer, being an itererant worker, Jack of all trades, Master of none, was in Grant's Pass, Oregon, picking hops. While there he made inquiry about locauons of attractive mineral specimens and was told by one of the foremen of an interesting occurence in Nevada, near Annie Lake, just across the line from Fort Bidwell, Calif. Some time ago while on an outing with his family to that locality, the foreman's little daughter had picked up several "petrified nuts".

Dr. J. C. Wilson, a mining man, was camped at the hop yards and I asked him if he knew of petrified nuts around Annie Lake. His answer was that he had seen specimens that looked like nuts but was not sure if they were petrified. I became keenly interested however and decided to visit the locality at my first opportunity.

This season I again decided to work in Oregon, during the hay harvest, and planned to prospect Annie Lake district en route. But the hay harvest was much earlier in the Fall River Valley, Shasta County, Calif., through which I passed, and so stopped to work there first. While there, I, being a single man, had the good fortune to make the acquaintance of a charming lady on the ranch who had begun collecting minerals in a small way, was quite a lover of nature and a "rock hound". She told me that 60 miles away was Glass Mountain, which was said to be a mountain of jet black obsidian. She had never been to the locality and could not vouch for the veracity of the story. We planned to visit it and arranged an outing for August 2nd.

We arrived at Medicine Lake, three miles from Glass Mt., at 1:00 P. M. Medicine Lake covers about one square mile and is from 185 ft. to 500 ft. deep; a lodge and tourist cabins are on its shores open for the accommodations of the tourists during summer months. After we had enjoyed a delightful lunch, prepared at the ranch by my companion, and eaten on the windward side of the lake where the breeze was delightfully cool and refreshing in contrast to the summer heat of Fall River Valley, we continued on to Glass Mt. As I am no geologist, I shall only attempt to describe the mountain as well as a layman can. The mountain I estimated was a ridge some 3 miles long with an average height of 100 ft. above the surrounding country. As I saw no crater from which the obsidian flowed in ages past, I settled on two conjectures: first; what is now Medicine Lake was once a high crater from which the obsidian, pumice, lava and other volcanic matter was ejected. The crater later sunk to form the present lake. Second; the earth cracked open and emitted the magma of the present Glass Mt. But the former theory seems more feasible as it will also account for the presence of other volcanic substances heaped up in the surrounding area.

I was disappointed in the quality of the obsidian. A map of California procured at a filling station gave it as "A Mt. of jet black obsidian." It was grayish in color and with a glossy texture. Nevertheless I loaded a 100 lb. specimen to take back to the ranch for a yard ornament as well as a few smaller pieces that had weathered to an iridescence on the surface.

After climbing Glass Mt., we left for home. We had gone about two miles when we came abreast of Pumice Mountain which was about a half-mile distant from the road on which we were traveling. We stopped to visit it. We intended parking on the side of the road and going on

foot to the mountain which I will describe only as a mountain of pure pumice. Where I planned to park looked like hard ground coated with pumice float from the nearby mountain. But after I drove the car off the road onto it, I discovered to my sorrow that it was a bottomless fill of pumice float so light that the wheels of the car could get no traction and they just threw a shower of pumice into the air and buried the car up to the running board in the loose material. That ended my explorations for the day as I worked four hours shoveling out the car, jacking up the wheels, and carrying poles to make a corduroy road to get back on the main road. After flagging as many sight-seers as could get around the car and lift, a lady from Colorado finally drove it back on the road. (at dusk and time to go home).

My lady companion proved a good sport. When the car got stuck she offered to help me. As she was such a heavy-weight, 5 ft. 4 in. tall, weight 105 lbs., I told her she could best help me by sitting in the shade and resting while I got the car out of the mire. She was a real rock hound, however, and spent the time hiking over to the mountain alone where she collected some nice pumice specimens of a satiny texture. Many chipmunks were scampering all around us and because of the lady's agility in climbing the hills, I named her "Little Chipmunk".

I will merely say that the above mentioned localities are in Siskiyou County, Calif. Siskiyou County is the central county of the three that span the state at its northern extremity. There is to be seen in that county, Mt. Shasta, a mountain with a perpetual cap of snow, elevation 14,153 ft. above sea level; Medicine Lake; Pumice Mt., and Glass Mt. Principal specimens, volcanic. As free maps can be obtained at gas stations, I will not describe the routes into it. If you intend visiting it, don't rush. Read road signs even if you have to stop and back up to see them. Also get all the informations you can at Forest Ranger Stations. I omitted the fact that there are ice caves to be seen within a short distance of Medicine Lake where nature runs a perpetual ice factory. Ice is formed because the water seeping through the lava carries a chemical that causes it to freeze.

At Fall River I also made the acquaintance of an insurance agent, who was wearing a nice moss agate in his ring. Of course, I being a rock hound, had to ask him to let me see it, which he did. When he learned I was interested in minerals, he asked why I didn't go over in the Surprise Valley (of Modoc County, Calif.) to get some opals. This was news to me, as I never heard of any opals being found there. He then informed me, that he had seen a man wearing a large opal from there who told him, the opal could be obtained by the ton. Of course I knew that was a mistake, that precious opal could not be obtained by the ton. I had seen two different people wearing rings that they called "opal", one of which was picked up in the desert in Lake County, Oregon, and the other in northeastern Calif., so I concluded the insurance agent had in mind a type of chalcedony which is occasionally found carrying a lavender "fire", really a lovely stone, much harder than opal and I would be glad to possess some of it, to know it's real name, and to know a locality where it is to be found.

Consequently, I resolved that I would go over to the Surprise Valley to investigate as soon as the hay work closed, with the hope of finding this particular chalcedony. I intended to visit Surprise Valley first and then go over into the Annie Lake region to investigate the petrified nut story. I told the "Little Chipmunk" of my intentions and she asked if she would be in the way if she went along. I really didn't think it safe for her to go with me to the "petrified nut" region as in there were roads not much better than sheep trails. So mentally I abandoned that part of the trip but told her she could go with me on the "opal" (?) hunt as it was

in a more settled country and nearer civilization.

So she, her little niece, and I set out bright and early August 17, for Surprise Valley, Modoc County, Calif., to hunt "desert opals". I made inquiry at Cedarville, Calif., and was told by all of whom I inquired that the only opals known to them were over in Nevada from 80 miles east of Cedarville, and 132 miles N. E. of Winnemuca Nevada. Well, I felt completely out after learning the locality was so far away and would have returned home at once had it not been for encouragement from "Little Chipmunk". She reminded me that the car was running well, that we had been told roads were fair even though they were dirt roads, that it was only a 100 mile stretch, that we could make it to Denio, Oregon, a point on the Oregon Nevada Line 28 miles from the locality where the opals existed, where hotel accomodations could be had for herself and niece, and that we could come back and scout around the opal fields next day enroute back home. I was very glad she made the suggestion and acted on it. That night, shortly after dark, we overtook a lone horseman and knowing if a lone horseman was riding that road at night a ranch house was near, I stopped and hailed him. We learned he belonged at a ranch some 4 miles ahead. I informed him of our business and he told us that we were then in the middle of the opal fields. He said the lady at the ranch had facilities for taking care of us and we would not have to go on to Denio. On arrival at the ranch we were received very hospitably by the ranchman and his wife (Mr. and Mrs. Duferrena). They were very, very kind to us so that our stay was a real pleasure. They helped us in every way they could, directing us to where we would be most likely to find opals; showed us their collection of beautiful petrifactions, agates, opals etc. Imagine my surprise when I learned that we were in the Virgin Valley district described by Arthur Montgomery in the October 1934 number of ROCKS and MINERALS. The Duferrenas knew Mr. Montgomery well. My experience in the Virgin Valley left me a different opinion to that formed by Mr. Montgomery.

I have lived in the semi-arid, semi-desert west since 1907 and am much inured to the "life of suffering" the "desert rat" must undergo. Hard work and hardships has become my normal life, consequently I was very much at home in the beauutiful sage brush valleys and painted hills of the Virgin Valley country. There had recently been cloud bursts over that section and many roads were too badly washed out to be traveled by automobile, so Mr. Duferrena pointed out and directed us to the only one known to be passable by automobile. It led us to the foot of a mountain and to dumps where attempts had been made to work the opals. The first dump we inspected only yielded a few very small specimens of a poor "fire". As we got nearer the mountain, we found the remains of what had once been a prospector's camp and out in front of this camp we found where apparently he had been dumping his finds to sort them. By following that procedure at each old tent site we filled an eight ounce bottle with opal fragments all showing fire from fair to excellent in quality. While coming down a worked trail the niece found a beautiful light clear specimen ⅜in. cube and opal being her birth stone she intends to have it set in a ring. As the country abounds in the most lovely petrified specimens I have ever seen, we were all lugging as many of the choicest specimens as we could carry. I observed that the "Little Chipmunk" had lagged back for some reason. I stopped and looked back to see her gazing intently at something. I called and asked what was keeping her. She said she had found something. I went back to see what her find was. When I reached her she was holding three nice fire opals in her hand, about ⅜ in. diameter by 3/4 in. long, which had been shoveled out with the dirt when the trail was made but no more were found. We all went back to the car,

sat down in the shade of a big boulder, ate a watermelon I had brought from Cedarville, Calif., and felt delighted with the good results for only one day's collecting! We then stowed away our treasure in the "turtle" of the coupe, seated ourselves happily in the car to return to the Duferrena Ranch but when I turned on the switch something sputtered and smoked and then the insulation went up in smoke. I "hotfooted" for the Duferrena ranch 7 miles away to see if any insulated wire could be found and got enough to replace the burned out wires. Mr. Duferrena drove me back in his car but on the way we met the ladies hiking in to the ranch being at a loss to know why I had not showed up. It had taken me 'til after dark to walk to the ranch, get the wires, fill two water jugs at the artesian well, and so naturally they became worried. Mr. Duferrena turned back to the ranch with the ladies while I walked on to the car with the two jugs of water, and extra wires. On arrival, I rolled out my bunk which I always carry in the car, gazed at the stars, drank in the cool desert night breeze and finally lolled off to sleep. I awoke at sunrise, went over the wiring, attached the new wires, packed the car again, stepped on the starter, and as the old motor purred, I took off down the hill when "pop goes the weasel". My ignition was gone again. Mr. Duferrena had told me the night before that in case I fail to get started I could call on his brother-in-law, Mr. Archavaleta, who lived up the road 2 miles from where the road forks; that he was fairly handy at putting a car in order. It was also a much shorter walk, consequently I went there. I was fortunate to find two cars parked at his place (a party of two women and three men who after only three hours search had collected seven opals about one inch in diameter by two inches long—one being a fine black opal). These gentlemen and Mr. Archavaleta drove me back. We got the car in condition and it gave me no more trouble. We remained overnight at the Duferrena ranch, got an early start home next day and arrived at the Fall River Ranch safe and sound at 4:00 P. M. I am home again at Palo Cedro, Calif., have washed my opal fragments, dropped them in small vials of glycerine for preservation, and am happier and wiser with many pleasant memories of the kindness of the Duferrena's and Archavaleta's and will say that 99 and 99/100 of the people I have met the world over have hearts of gold; this is true from the hoboes to the millionaires. The world is growing better, only newspapers specializing in crime news make us think crime is on the increase.

Should any readers of ROCKS and MINERALS want to reach the opal fields, will say, if you are coming up from the south in Calif., keep north on highway 99 until you get about 5 miles north of Redding. Then take highway 299 to Alturas, Calif., Alturas is the end of 299. At Alturas take No.395; follow it six miles; take right hand road marked Cedarville; at Cedarville take road to Denio, Oregon, which crosses the N. W. corner of Nevada. Eighty miles out on that road will be found the Duferrena ranch which is the second house on the road out from Cedarville.

Assuming you live in any locality which will not bring you up from southern Calif., get free maps of Nevada, California and Oregon. Look up Alturas, Calif., Cedarville, Calif., and Denio, Oregon and locate your route.

«————»

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THE ERUPTION OF MAUNA LOA VOLCANO

Eye witness account of the last eruption in the fall of 1935

By MISS KANIU HOPAI
Hilo, Hawaii

The eruption of Mauna Loa volcano on the Island of Hawaii, was a gorgeous sight. One morning I was awakened at three-thirty and looked through our bathroom window when lo, and behold, I thought there was a great sugar cane fire raging on Mauna Loa. The glow of the volcano had spread miles across the sky, lighting up the countryside. I then learned that the volcano had been in eruption since six o'clock the evening before. Many people in and about Hilo rushed down to the warf and airport to see the flow from the volcano as it slowly crept down the mountainside. The distance was great but we could actually see the molten stream of lava flow down the side of the mountain. About six weeks after the volcano erupted, I went up to the scene of activity. It's a good thing that the C. C. C. camp was in operation at the time. Otherwise it would have been impossible to travel the cowpaths by auto. The boys did everything to make the roads passable for the streams of cars that traveled to the foot of Mauna Loa. After a slow, treacherous two and one-half hour ride over twenty-five miles of rutty, curving, dangerous roads, we finally came to Humula, the Parker Ranch sheep station. After another short "rutty" ride we parked our car on a little knoll and walked a few hundred feet down to the flatland and right up to the lava. From where we stood at the top of the little knoll, I thought we were looking upon a canopy of fire but on closer observation we found it to be a bed of molten lava. We arrived there while it was still dark, thereby getting a beautiful night view as well as the mysterious day scene. There were scores of people dragging the liquid lava from its bed and —molding it into specimens. Some people shoved pennies and china dolls into the center of their specimens while they were still in their "kneadable" condition. Silver coins could not stand the intense heat for they gradually melted before the lava souvenirs had a chance to cool off. I took moving pictures of a fellow traveler as he scooped the lava from the flowing mass and moulded it into different shapes. I had some moving pictures taken of me as I ran across the slowly cooling lava.

There was a radio mike set up near the scene of activity, and oh, how the announcer fibbed into it. He said that people were fleeing from the volcano, but it wasn't so, as everyone was rushing to it instead. The flow was so slow that people were actually dozing off near it, about ten feet away. There was no danger of any accident unless a person was foolish enough to sit or stand right on the fire. Lono and a few Hawaiian friends sang some songs over the air.

It was wonderful to follow the course the flow had taken. It did not run straight down the mountainside but flowed from side to side, and for about three miles it followed an old flow covering it with fresh lava and as it came to knolls or hills it divided at one end and met again on the other side.

Just before the New Year, I again made another trip up to Humuula with some friends. The sight was so different from the first one we had seen that it was like experiencing something entirely new. We steered our car away from the beaten track and arrived miles away from the last scene of activity. This time we didn't have as easy a time getting to the actual scene of flowing lava as we had the first time. We followed the cooled off lava about three miles before we saw some activity. Again there were many people moulding

specimens. C. C. C. and Parker Ranch boys were everywhere always on the alert for any signs of brush or forest fires. They worked in shifts. There were gas jets spouting everywhere on the cooled-off lava beds and had to be watched constantly. People were everywhere toasting sandwiches, broiling meat, and boiling coffee over the red hot cracks in the lava. Further on the lava was rushing along like a river.

THE AMATEUR LAPIDARY

Conducted by J. H. HOWARD*
504 Crescent Ave., Greeneville, S. C.

Amateur and professional lapidaries are cordially invited to submit contributions and so make this department of interest to all.

*Author of—*The Working of Semi-Precious Stones*, and *Handbook for the Amateur Lapidary*.

SMALL CABOCHONS

By ARTHUR KNAPP

A great many amateur lapidaries have had the experience of either finding very beautiful small pebbles on beaches or in streams or having such brought to them by others. It is a simple matter to polish a few of these but it is a very tiresome job to polish a number. These very small cabochons (one quarter inch or less in diameter) are very useful to set in jewelry.

The following procedure is suggested. Mount them on small diameter dop sticks. Bring them roughly to a hemispherical shape by grinding on a fine grain carbo wheel. Finish the grind by using a piece of iron or brass, whose outside diameter is approximately the diameter of the gems and which has been drilled at least one half its diameter to make a cylinder. This may be held in a small chuck. In other words use the same technique as is used by many in grinding beads.

With these small gems, one grind with F carbo is probably fast enough. Look out for overheating. The writer holds three or four in his hand at a time and keeps changing them around.

Finish grinding on a linoleum lap with a groove cut in it approximately the diameter of the gem, using 600 carbo. Polish with oxide of tin on the edge of a felt wheel and again look out for over-heating.

Ordinarily the backs of opaque gems do not need to be touched. Most of them will be nearly flat and good enough for mounting. Since the polished tops will be approximately hemispheres, there is no need to orient the back carefully in polishing transparent stones. The back is best ground down with 120 carbo on a cast iron disc and polished with pumice on a linoleum lap, unless a high polish is desired.

It is surprising how quickly these little cabochons can be made. Once everything is in running order, it is possible to make twenty or more of them in an hour. This technique is excellent for tiger eye also.

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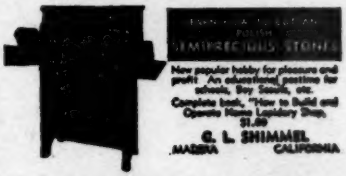
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